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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/762,609

01/22/2004

Joseph Szwarc

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22885

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09/01/2005

MCKEE, VOORHEES & SEASE, P.L.C.

801 GRAND AVENUE

SUITE 3200

DES MOINES, IA 50309-2721

EXAMINER

EASTHOM, KARL D

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/762,609

Applicant(s)

SZWARC ET AL.

Examiner

Karl D. Easthom

Art Unit

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 2832

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 and 11-15 are rejected under 35 U.S.C. 103(a) as obvious over Zandman '413 in view of Witt et al. Zandman discloses the claimed invention except for foils on both sides of the substrate at Figs. 5-6, where the substrate is alumina having the claimed thickness at col. 5, lines 40-45 (4-40mils), the resistive film TCR is zero at one point at Fig. 2 or at Fig. 5, (and thus 1 at some lower temperatures at least), the thickness is in the claimed range of 30-300 micro inches at col. 5, lines 1-10 (.03-3 mils) cemented by 4 to the substrate, and all selected to produce a reduction of resistance change at the bottom of col. 1, for example. Note that at Fig. 6, the overall TCR is close to zero or it would have been obvious to make it in the claimed range in order to match it to that of the substrate, which is close to zero, as noted at col. 6, lines 1-30, col. 3, lines 15-35. For claims 2-6, all the parameters are altered to reduce the resistance as noted at col. 1. For example, for claims 2-3, substrates and foils are selected at the top of col. 5, while the foil thickness is selected as noted above. For claim 6, the resistor or a resistor is etched and selected to reduce the TCR as noted at col. 6, lines 1-50. The pattern will reduce bending as compared to a case where the TCR of the resistors are not selected, where bending is reduced at col. 5, lines 45-65. In claims 7-9, cement is chosen at col. 5, lines 44-47, while the thickness is "selected" since there is some thickness in the end. That is, how certain parameters are

Art Unit: 2832

selected are not germane to the product claim where in the end all claimed elements are present. Note that applicant employs alumina in his specification, and that appears to be the only substrate material disclosed, so that it inherently has the claimed modulus of elasticity. Zandman discloses such a cermet or cordierite ceramic substrate at col. 5, lines 5-30 which is expected to have the claimed modulus since applicant employs alumina, where it would have been obvious to employ the alumina as a single substrate where the substrate is listed as a ceramic at col. 5, lines 5-31. In claim 11, the TCR can be determined over any range, and no structure results from the determination. Where alumina lacks the claimed modulus, or where for example certain aspects are not chosen as claimed such as the thickness, or cement type, and such a mental step for a product claim is required, it would have been obvious to select such a modulus, or other parameter, to reduce the TCR where col. 5, lines 5-30 discloses choosing a substrate to minimize the TCR and where a compensating substrate is chosen based upon its thickness, modulus of elasticity and coefficient of thermal expansion, see col. 5, lines 45-79. Note too, with any prior art device such as that of Zandman, one could imagine an increase such as by choosing another material, so that the product of Zandman is a reduction as to that imagined product. Similar remarks apply to claim 12, since the process steps create no distinct product, and see col. 9 specifically disclosing offsetting strain (stress) as claimed. In claim 13, the device is capable of operating hotter than ambient since resistors create heat, Witt discloses resistors on connected on both sides of the substrate, preferably of the same identical size, in order to minimize bending so as to handle more power. Zandmann discloses putting

Art Unit: 2832

structures on the opposite side of the substrate in order to minimize bending in order to handle power also, see col. 2, lines 2-20, col. 5, lines 46-67, so that placing another equal resistor type on the other side would have been obvious. Also, Witt discloses at col. 5, lines 25-40, that the resistor can be reduced in size and cost and can be circuit mounted, so that there is more motivation to implement the claimed structure.

3. Applicant's arguments filed 7/25/05 have been fully considered but they are not persuasive. Applicant argues essentially that there is no motivation to provide another resistor of equal size to the Zandman device. This is not correct as noted above, where Witt discloses putting resistors of the same size on the other side of the substrate in order to minimize bending of the substrate. This also allows more power and provides other benefits as noted below. Whether or not Zandmann teaches same, or teaches using a different type of structure, or solves another problem, or Witt discloses thick films, does not detract from the motivation disclosed by Witt, which teaches solving the problem of bending so as to handle more power, and also to allow reduced cost, and reduced size and circuit board mounting, all performed by putting preferably an identical resistor on both sides. An equal size identical resistor on the other side, placed in the same manner and connected as claimed means all of the claimed features would be present.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within


Art Unit: 2832

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl D Easthom whose telephone number is (571) 272-1989. The examiner can normally be reached on M-Th, 5:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Karl D Easthom
Primary Examiner
Art Unit 2832

KDE